Postal Regulatory Commission
Submitted 1/31/2014 3:55:26 PM
Filing ID: 89089
Accepted 1/31/2014

DOCKET NO. ACR2013
VALPAK INITIAL COMMENTS

Appendix
(January 31, 2014)

THE VALPAK MULTI-PERIOD MODEL FOR OPTIMIZING CONTRIBUTION FROM STANDARD MAIL

By

John Haldi, Ph.D.
Haldi Associates, Inc.
488 Madison Avenue, Suite 1100
New York, NY 10022-5702

I. Introduction

The single-period Valpak Model for optimizing contribution to Standard Mail has been extended to span additional years. A multi-period model could help bring to light issues that may be overlooked in a single-period model. By way of brief summary, the addition of extra years, per se, only reinforces findings from the one-period model submitted previously.

II. Some General Considerations Applicable to Multi-Period Models Used to Study Effects on Contribution

A. Projected Price Cap.

The price cap applies to each class of mail separately. Within each class, the cap limits the additional revenue that the Postal Service can obtain from annual price adjustments imposed on the various products within the class.

In the absence of any unused price cap authority or any extra authority that might be allowed as the result of some special promotion, the price cap for a class of mail in any given year is simply the maximum increase in revenue permitted by applying (i) the annual percentage change in the CPI to (ii) base period revenues for the entire class. In prior discussions of the Valpak Model, the product of the percentage change in CPI times prior revenues has been described as "allowable revenue." This is the maximum additional revenue which the cap allows the Postal Service to obtain from an annual price adjustment. The Postal Service refers to that figure as its "price cap space."

Postal Service price adjustments have no perceptible influence on changes in the CPI. Consequently, in any model that focuses on the Postal Service and takes the rest of the world as given, the price cap will be exogenous. This means that for each future year covered by the model, the model builder must project (or assume) what the increase in the CPI will be.

The model incorporates a price cap of 1.7 percent for rates effective January 26, 2014, and it assumes that CPI increases thereafter at 2.0 percent per year. However, if there is reason to believe that in successive years the percentage change in the CPI will deviate (in predictable ways) from the assumed rate of change, that can be incorporated readily in the model. After the Base Year, assumed CPI is a user input.

B. Projected Product Elasticities.

In general, the Postal Service does not estimate elasticities for individual products within each class of mail. For Standard Mail, common (or average) elasticities are estimated for two groups of products using a large sophisticated econometric model. The Postal Service's econometric model for estimating elasticities utilizes historic data on mail volume, prices, and a number of other variables.

The Postal Service submits updated estimates of product elasticities to the Commission each January. Two separate issues arise with respect to the elasticities estimated for Standard Mail product groups:

- Are the elasticities for individual products within each group similar, or are they widely divergent from the average elasticity estimated for the group?
- In a multi-period model, is it reasonable to assume that product elasticities will be relatively unchanged over an extended time period such as 3 or more years, or are there established underlying trends for different products that should be used to project elasticities over the period covered by a multi-period model?[1]

As noted in Section VI of these Initial Comments, in the Exigent Rate Case, Docket No. R2013-11, Postal Service witness Taufique stated that:

---

[1] Although the elasticity estimates submitted each January vary from year to year, no effort has been made to study the change, or evolution, of those product elasticities over time and investigate whether they exhibit any kind of underlying trend. *See* Table A-1 for a comparison of demand elasticities for 2013 and 2014.

> Standard Mail own-price elasticities are not known with enough certainty to justify mechanistic application in a model whose legitimacy (e.g., vis-à-vis "maximizing" contribution) relies to a great extent on those elasticities. This particularly applies for Standard Mail Flats and Standard Mail Letters whose **elasticities are not even estimated separately by the Postal Service.** Response to POIR No. 11, question 8(b) (Emphasis added.)

Witness Taufique's lack of confidence in the elasticity estimates produced by the Postal Service was echoed in comments filed by VDM and NPPC, MMA and NAPM (citing Buc). Despite witness Taufique's lack of confidence regarding the elasticity estimates for Standard Flats, rebuttal testimony by witness Thress averred that his econometric estimates constituted the best estimates available.

The Valpak multi-period model incorporates the Postal Service's most recent estimate for product elasticities, submitted to the Commission on January 22, 2014.[2] Absent any reason to change, the model assumes that elasticities remain the same in each successive period. If desired, however, they can be input separately for each product and for each included in the model. *See* Section II.B.3 in these Initial Comments for a separate discussion concerning the implications of possible higher elasticities for Flats. The

[2] These elasticities incorporate lags. In the model here, however, they apply to price changes without any lag.

elasticities for Standard Mail products as submitted by the Postal Service in January of 2012, 2013 and 2014 are shown in Table A-1.

Table A-1

Postal Service Estimated Demand Elasticities for Standard Mail Products

	January 2012	January 2013	January 2014
HD and Saturation Letters	-0.781962	-0.704042	-0.890227
HD and Saturation Flats	-0.781962	-0.704042	-0.890227
Carrier Route	-0.781962	-0.704042	-0.890227
Letters	-0.335240	-0.437241	-0.457163
Flats	-0.335240	-0.437241	-0.457163
Parcels	-0.335240	-0.437241	-0.457163

From 2012 to 2014 the elasticity estimates for the first three products fluctuated, but showed no discernable trend. For the last three products, the elasticity estimates did increase. These are only three successive data points, however, not sufficient to establish a trend. Although they lend some support to mailer comments that elasticity has increased, whether they represent an underlying trend toward higher elasticity is not known.

The Commission has stated that having estimated elasticities for each product in Standard Mail would be an improvement. Until the Postal Service makes such estimates available, the effect of assuming a substantially different elasticity for a single product within the group (*e.g.*, Flats) can be studied by means of sensitivity analysis, as is done in the "The Revised Valpak Model for

Optimizing Contribution from Standard Mail," which was submitted in Docket No. R2013-11 as an Appendix to Valpak's Initial Comments.[3]

C. Independent Secular Trends in Volume.

A secular trend reflects volume changes that are independent of and not influenced by price-induced changes in volume — *i.e.*, a secular trend reflects the effect on volume of all variables *other than price*. A multi-period model might ignore such trends, but if they are statistically well-established and known to exist, over time their effect will be cumulative and a multi-period model that incorporates such trends would provide a more realistic analysis.

In Docket Nos. ACR2012 and R2013-11 the Postal Service expressed concern that Standard Flats were subject to a secular trend that diverges from the other products in Standard Mail. Standard Flats volume admittedly has declined significantly in recent years. Not known, however, is the extent to which that decline reflects (i) long-run effects of the substantial price increase of 2006 (*i.e.*, long-run price elasticity), or (ii) factors other than price.

In the Exigent Rate Case, Docket No. R2013-11, in an effort to explain causality of observed changes in volume, the Postal Service conducted a "backcast" (as opposed to a forecast). For products in Standard Mail, Postal Service witness Thress used intervention variables that helped improve the statistical fit, but lacked causal premise that would enable a confident

---

[3] *See* Section III in that Appendix.

projection of trends in volume. An econometric study of secular trends might help separate trend and price effects. However, for none of the various products in Standard Mail has the Postal Service presented any recent econometric study designed to isolate and project underlying longer-run secular trends for several years into the future.[4] Thus, despite Postal Service references to decline in the volume of Flats, the record contains no established negative trend for the model to incorporate.

A sensitivity analysis to study the effect of different assumed secular one-year changes in Flats volume is presented in "The Revised Valpak Model for Optimizing Contribution from Standard Mail."[5] This is an alternate way to analyze the effect of secular trends without having an explicit estimate of the trend itself. For each year covered by a multi-period model, a secular trend is recorded as an *average* annual percentage decrease from the prior year.

In the model here, the decline in volume as a result of any assumed trend is deducted at the beginning of the year, and the effect of price elasticity is applied to the reduced volume. The current model enables such secular trends to be input separately for each product in Standard Mail, but the current default for each product is a zero exogenous trend. As noted in Section

---

[4] Such studies may exist internally within the Postal Service and be used for their internal forecasts, but they have not been made public.

[5] *See* Section IV, pp. 21-27, in that Appendix.

II.B.4 of the comments to which this is appended, incorporation of a secular trend does not change any conclusions regarding pricing of Standard Flats.

D. Projected Volumes.

For each product specified in the model,[6] the projected volume will reflect the combination of (i) price-induced changes in volume that result from elasticity, plus (ii) changes in volume resulting from any secular trend. From one period to the next, the model projects changes in volume — *e.g.*, the ending volume in Year 1 is the beginning Base volume in Year 2. On the surface those year-to-year changes in volume may appear to be endogenous. They depend, however, upon critical assumptions about elasticity and secular trends, neither of which are endogenous to the model itself.

E. Projected Unit Attributable Costs.

In the initial Base Year, CRA total costs are a user input. The Base Year in the current version of the model is FY 2013, the latest year for which a CRA Report is available. After the initial Base Year, the model uses projected volumes and unit costs to develop total costs for each successive year. A multi-period model must include, and therefore must consider, the issue of how unit attributable costs will change from one year to the next. Unit

---

[6] In addition to Standard Flats, the Christensen Associates model presented in Docket No. ACR2012 simply included a single "product" described as "all other" — *i.e.*, a group of products with no known secular trend. The Valpak model specifies each product separately, including parcels, whose volume is now *de minimis*.

attributable costs primarily reflect labor costs and productivity. Over the last 40 to 50 years, the portion of total costs that are labor-related has remained fairly constant, at around 80 percent of total costs, despite the extensive mechanization and automation put in place for mail processing.[7] For the most part, Postal Service productivity has changed only gradually as successive generations of automation and mechanical equipment have been deployed.[8] Consequently, unit costs are presumed to increase in line with the CPI. In a single-period model, it is reasonable to assume that changes in unit attributable cost will depend almost solely on labor costs, which in turn will be highly correlated with changes in the CPI.[9]

Over periods longer than one year, however, the change in unit attributable costs conceivably might differ from the change in CPI as a result of various factors specific to the Postal Service such as, for example, (i) re-negotiated labor contracts,[10] (ii) legislation, or (iii) deployment of a new

---

[7] The 2013 Report on Form 10-K indicates that personnel related costs amounted to 78 percent of total costs in FY 2013. *Id.*, p. 28.

[8] The Commission's Decision in Docket No. R2013-11, Order No. 1926, contains a chart showing the change in total factor productivity for the years FY 2007 to FY 2013. (p. 135.) The 2013 Report on Form 10-K shows TFP for the 1972-2013. *Id.*, p. 44.

[9] Postal Service union contracts contain escalator clauses that are linked to changes in the CPI, and that trigger no less often than annually.

[10] The Postal Service attributes an unspecified but substantial amount of the reduction in unit costs in 2013 to reduced labor costs resulting from renegotiated contracts. Response to ChIR No. 2, Q1.

generation of improved automation equipment.[11] For further discussion, *see* Section VII, *infra*. A relatively neutral assumption with respect to future unit attributable costs is to assume that (i) productivity will not change, and (ii) unit costs will increase in line with the CPI. This assumption is incorporated in the model. However, should other information indicate a better assumption, future unit costs can be input by the user.

As a result of the above assumptions concerning unit costs, the model does not project any significant reduction in the unit cost of Flats.[12] Witness Taufique speculatively asserted that:

> [the Postal Service] **believe[s] [flats] will become profitable** as Postal Service and the mailing community adjust to operational and marketplace realities." Order No. 1926, p. 161. Emphasis added.

However, the Postal Service has not provided any evidence that even remotely would support such a heroic assumption of future profits, which at this time appear totally illusory. Consequently, in the multi-period model here the profitability of Standard Flats does not change on account of hypothetical

---

[11] The Commission, in order to justify taking no action with respect to underwater products despite the continuing large losses incurred on their account, often has elected to speculate about possible future reductions in unit costs for those products. See, for example, Commission discussions about the then-forthcoming *Periodicals Study* in ACDs prior to publication of the *Periodicals Study* in September, 2011.

[12] *See* the discussion in Section VI.C of these Initial Comments concerning the near term outlook for the unit cost of Standard Flats.

future cost reductions. Profitability of Flats does increase in the model, but only in response to price increases selected for their beneficial impact on contribution and liquidity.

III. Appropriate Tradeoffs Will Increase Net Contribution

Expanding the model to accommodate additional time periods does not alter the way by which pricing can increase contribution. Nor does it alter the basic results and conclusions of the one-period model. The model proceeds by increasing contribution up to the desired level available within the cap for the initial year. It then moves on to the next year, where the process is repeated.

As explained in the Section II-B of the Appendix to Valpak's Initial Comments in Docket No. R2013-11, maximization of contribution is neither required, nor is it automatic. For selected products, arbitrary limits can be imposed on price increases if desired. Then within the price cap and the confines of any such arbitrary constraints, contribution can be maximized.[13] The Postal Service has supplied the rationale for using the model to extract maximum or near-maximum contribution from its price adjustments:

> The Postal Service's goal at this time in its history must be to maximize contribution, not reduce it. Postal Service Brief, USCA-DC No. 11-1117.

[13] Relaxing any arbitrary constraint and maximizing contribution without that constraint will indicate how much contribution is lost on account of that constraint. The model is quite versatile in this regard.

A. The Focus of Tradeoffs Is The Impact on Contribution.

In each successive year, the price cap is applicable to each class of mail. Each year the cap limits the total additional revenue that can be obtained from all products within each class. Within each class, this limitation on total additional revenue forces consideration of tradeoffs. Namely, when a set of price adjustments collectively increases revenue to the maximum permitted by the cap, any further increase in the price of one product will necessitate an offsetting reduction in the price of one or more other products so as not to exceed the cap. Offsetting price adjustments that just maintain the maximum additional revenue allowed by the cap are defined here as *tradeoffs*. The idea underlying tradeoffs is to show how a price increase on one product impacts contribution; *i.e.*, the Postal Service's bottom line. By comparing tradeoffs, one can select those price adjustments whose impact on the bottom line is the most beneficial.

If the Postal Service should, for any reason, consider nearer term profits to be of little consequence, the near-term profits can be ignored in favor of more amorphous longer term benefits. Even under this circumstance the model can be useful. It could quantify the near-term benefits foregone in favor of those unspecified longer-term results that the Postal Service so hopefully desires.

B. Postal Service Critique of Tradeoffs.

Postal Service Reply Comments in the exigent rate case, Docket No. R2013-11, contain the following statement, presumably intended as a criticism of the Valpak one-period model which was presented as part of its Initial Comments in that docket.

> **Cap space is a zero-sum game**: contribution raised from Standard Mail Flats would come at the expense of contribution from other Standard Mail products, so any net improvement in liquidity from Valpak's strategy might well prove more ephemeral than Valpak would care to admit. *Id.*, pp. 113-114. Emphasis added.

This statement conflates contribution with revenue, hence it scarcely could be more erroneous. It would appear that the Postal Service seemingly does not comprehend the difference between revenue and contribution. If so, that would help explain the Postal Service's liquidity shortfall in FY 2013 and why it had to seek an exigent rate increase.

To give a simple hypothetical example of the critical difference between revenue and contribution associated with different products, consider what would happen if the Postal Service somehow were to get an unexpected "windfall" increase in the volume of (i) Standard Flats, or (ii) High-Density/Saturation Letters such that the additional revenue from the new volume is identical.

- In the case of underwater Standard Flats, revenue from the unexpected volume goes UP, while

contribution and liquidity go DOWN (because the cost of handling that volume will exceed the increase in revenue).

- In the case of High-Density/Saturation letters, the most profitable product in Standard Mail, revenue likewise goes UP (by the same amount as Flats), while contribution and liquidity also go UP (because the increased revenue will exceed the increase in costs of handling that volume).

In this hypothetical example, the additional revenue from the new volume of Standard Flats and High-Density/Saturation Letters is the same, but the effect on contribution and liquidity differs strikingly. With respect to **revenue**, *once additional revenues from rate adjustments have been maximized*, it might be legitimate to say that cap space is a zero-sum game, meaning that any further increase in **revenue** from one product then must be offset by a reduction in **revenue** from other products.[14] That is the fundamental essence of tradeoffs. It is the cap on *revenues* that necessitates the measurement and weighing of tradeoffs in contribution among the various products in a class of mail. The Postal Service critique could scarcely be more inapt with respect to *contribution*.

[14] In prior discussion of the one-period model, this was described as movement along the revenue frontier.

C. The Postal Service Uses its Cap Space to Maximize Revenues, NOT Contribution.

The Postal Service consistently adjusts prices in a manner that utilizes virtually all of the available cap space. That is, for all practical purposes it does routinely maximize available additional revenue under the cap.[15]

Contribution is another matter, however. Price increases that produce the same amount of additional revenue can and do result in quite different contributions. The Postal Service's annual price adjustments almost invariably leave substantial room for increasing the net contribution — *i.e.*, in each annual price adjustment exercise the Postal Service deliberately and knowingly leaves a large amount of contribution, or net liquidity, on the table. For an estimate of contribution not "claimed" by the Postal Service's rate adjustment in Docket No. R2013-10, *see* Section IV-B, *infra*, (fn. 20). To justify the shortfall in net cash flow caused by continuing to run substantial deficits on those products that are perennially underwater, the Postal Service professes to be fully aware of the tradeoffs involved, offering a variety of reasons for its

---

[15] Any small amount not utilized is banked. Utilizing all the limited cap space to maximize available revenue is the beginning, not the end, of setting prices to obtain desired contribution. It puts the Postal Service in a position where it then becomes appropriate to see how much contribution can be obtained from equal amounts of revenue from different products. From a revenue perspective, such comparisons must be zero-sum, thereby keeping possible assuming price adjustments at the cap. Such comparisons involve tradeoffs — *i.e.*, within the limited cap space the Postal Service can choose one or the other, but not both.

failure to increase the price of those products (invariably intangible, non-quantitative, and judgmental).[16] Instead of lame excuses, the Postal Service should point to its statement that:

> The Postal Service's goal at this time in its history must be to maximize contribution, not reduce it. Postal Service Brief, USCA-DC No. 11-1117.

D. Using Tradeoffs to Compare Changes in Contribution Is Not a Zero-sum Game.

An increase in the price of underwater Standard Flats that results in a given amount of additional revenue would reduce losses (*i.e.*, increase contribution and liquidity) considerably more than the same amount of additional revenue derived from a price increase on any profitable product. Restricting the price increase so as to ensure that Standard Flats will continue being underwater and instead freeing up limited cap space so that the Postal Service can increase the price of profitable products obviously send signals that:

- Encourage money-losing volume, and concurrently
- Discourage profitable volume.

---

[16] It [the Postal Service] argues that "the mere tolerance of underwater products … does not, in and of itself, demonstrate a failure to exercise honest, efficient, and economical management, in light of the **various other factors** for which management's **reasoned business judgment** must account." Order No. 1926, p. 137. Emphasis added. Whether PAEA is the source of those "various other factors" that compel the Postal Service to incur continuing losses on Flats is ambiguous.

Revenue tradeoffs that adversely impact contribution by encouraging unprofitable volume and simultaneously discouraging profitable volume might aptly be described as having a double-whammy effect on Postal Service liquidity — *i.e.*, the Postal Service loses on both counts. Any such tradeoff most definitely is not zero-sum. Reversing direction of the tradeoffs, of course, would have the opposite effect: the Postal Service's contribution and liquidity would win on both counts, again definitely not a zero-sum game.

E. Formal Use of Tradeoffs Facilitates Transparency and Accountability.

The Valpak model was designed to demonstrate that cap space most definitely is not a zero-sum game as regards **contribution**. It involves tradeoffs between revenue and contribution from one product versus revenue and contribution from other products. To quantify the above example of a double whammy, suppose the Postal Service uses its cap space for:

- Restraining the price increase on Standard Flats, while
- Increasing the price of High-Density/Saturation Letters.

By restraining the increase on underwater Standard Flats, the Postal Service is foregoing a potential net increase in contribution (and liquidity) of over $1.00, while using that limited cap space to increase the price of its most profitable product to gain less than $0.50. Trading over $1.00 of potential contribution in return for less than $0.50 of additional contribution is hardly

the way to improve liquidity. Nor do such unfavorable tradeoffs conform with the statement that:

> The Postal Service's goal at this time in its history must be to maximize contribution, not reduce it. Postal Service Brief, USCA-DC No. 11-1117.

It is distressing when pricing ignores basic rules of economics. Presumably it is easier for the Postal Service to continue making such tradeoffs because they involve OPM — Other People's Money. Such decisions could not survive scrutiny under the ROI model used by the Postal Service to evaluate expenditures of its own money, as discussed in Section II of these Initial Comments?

By using the tradeoff schedules in the model, the Postal Service readily can see what pricing moves will improve its contribution. The model can be used to improve contribution in a systematic iterative manner. Contribution can be maximized if desired, but adjusting prices so as to obtain maximum profits is not required. However, use of such a systematic procedure would help replace speculative and biased pricing decisions with more objective pricing decisions.

IV. Some Results From the Two-Period Model

A. Effect on Mail Volume

Results from the two-period model on the volume of two Standard products used extensively by catalogs are summarized in Table A-2. As in prior versions of the Valpak Model, it is assumed that all changes to nominal prices must be non-negative — *i.e.*, no product receives a reduction in the nominal price.[17] Although various parameters may change, the underlying maximizing logic of the model is invariant. Price increases are focused each year on those products that give the greatest contribution per dollar of allowable revenue, which are the underwater products. No trend is assumed, hence the results in Table A-2 isolates the effect of price changes and elasticity.

Table A-2

Effect of Contribution Maximization on Volume of Two Flat-shaped Products

	Base Year (2013)	Year 1 (2014)	Year 2 (2015)	Change BY to '15
Standard Flats	5,568,019	5,285,566	4,983,899	-10.5%
Carrier Route	9,507,247	9,651,129	9,822,963	+3.3%
TOTAL	15,075,267	14,936,695	14,806,861	-1.8%

[17] Readers are reminded that when the CPI increases but the nominal price for one or more products does not increase, the "real" price declines. In the model, the elasticity effect is based on the real price change, not the nominal price change.

Some highlights of the results shown in Table A-2 are as follows:

- Underwater Standard Flats absorb virtually all of the price increases available under the cap, which cause volume of Standard Flats to decline by 10.5 percent over two years.
    - The volume of Standard Flats is almost 5 billion in Year 2.
- Profitable Carrier Route has no increase in nominal price, hence a decrease in real price which causes volume to increase by 3.3 percent over two years.
- The net effect on volume of the two products combined is a 1.8 percent reduction in volume over two years.
    - Increased Carrier Route volume largely offsets the decline in Standard Flats volume.

The results for all Standard Mail products, grouped as to whether they are profitable or unprofitable, are summarized in Table A-3. The unprofitable products, Flats and Parcels, absorb all the price increase allowed under the cap because they are so far underwater.[18] Profitable products receive no increase in nominal price, hence a reduction in real price. As in Table A-2, the results in Table A-3 isolate the effect of price changes and elasticity.

[18] The volume of parcels is both quite small and quite underwater. Rather than "optimize" results vis-a-vis parcels, in years 1 and 2 they arbitrarily receive the same percentage price increase as Flats.

Table A-3

Effect of Contribution Maximization on Standard Mail Volume

	Base Year (2013)	Year 1 (2014)	Year 2 (2015)	Change BY to '15
Profitable Products	73,391,490	74,157,384	75,068,919	+2.3%
Unprofitable Products	5,640,466	5,354,338	5,048,745	-10.5%
TOTAL	79,031,956	79,511,722	80,117,665	+1.4%

Highlights of the results shown in Table A-3 are as follows:

- Profitable products have no increase in nominal price, a decrease in real price, and the elasticity effect increases volume by over 1.6 billion pieces.
- Unprofitable products absorb all the price increases, and their volume decreases by almost half a billion pieces.
- The net increase in total volume is favorable, over 1 billion additional pieces.

To sum up, the Postal Service would do itself a favor by focusing price increases on its unprofitable products, and avoiding price increases on profitable mail, especially those profitable products with the highest elasticity.

B. Financial Effects.

Results from the two-period model on the revenue and contribution of two Standard products used extensively by catalogs are summarized in Table A-4. Highlights of the results shown in Table A-4 are as follows:

Table A-4

Revenue and Contribution from Two Flat-shaped Standard Mail Products

A. Revenue

	Base Year (2013)	Year 1 (2014)	Year 2 (2015)	Change BY to '15
Standard Flats	2,134,129	2,285,104	2,466,776	+15.6%
Carrier Route	2,372,594	2,408,501	2,451,383	+3.3%
TOTAL	4,506,723	4,693,605	4,918,159	+9.1%

B. Contribution

	Base Year (2013)	Year 1 (2014)	Year 2 (2015)	Change BY to '15
Standard Flats	(380,121)	(142,178)	132,254	n.a.
Carrier Route	593,926	572,220	545,028	-8.2%
TOTAL	213,805	430,042	677,282	+316.8%

- Combined revenues from these two products increases by 9.1 percent over two years (Part A).
  - The higher revenues from Standard Flats reflects price increases.
  - The higher revenues from Carrier Route reflects increased volume.
- Standard Flats go from deeply underwater in Base Year to marginally profitable in Year 2 (Part B).
- Contribution from Carrier Route decreases because the real price decreases (*i.e.*, no nominal price increase), while costs increase at the CPI rate.

- Contribution from the two products combined increases dramatically (Part B).

The revenue and contribution for all Standard Mail products, grouped as to whether they are profitable or unprofitable, are summarized in Table A-5.

Table A-5

Revenue and Contribution from Standard Mail

A. Revenue

	Base Year (2013)	Year 1 (2014)	Year 2 (2015)	Change BY to '15
Profitable Products	14,390,006	14,539,445	14,717,290	+2.3%
Unprofitable Products	2,204,619	2,360,580	2,544,559	+15.4%
TOTAL	16,594,625	16,900,025	17,261,850	+4.0%

B. Contribution

	Base Year (2013)	Year 1 (2014)	Year 2 (2015)	Change BY to '15
Profitable Products	6,516,530	6,447,705	6,361,220	-2.4%
Unprofitable Products	(419,279)	(172,556)	108,228	n.a.
TOTAL	6,097,251	6,275,149	6,469,456	+6.1%

Highlights of the results shown in Table A-5 are as follows:

- Total revenues increase by 4.0 percent, which is more than the cap (1.7% + 2.0% = 3.7%) because of favorable product mix.

- Contribution increases by 6.1 percent, considerably more than the 4.0 percent increase in revenues.

- Contribution in Year 1 increases by $177,898, and in Year 2 by $194,307.[19]

- The two "unprofitable" products in Base Year become marginally profitable in Year 2.

- The increase in total revenue for all Standard Mail products amounts to $667,225, which is slightly more than the allowable revenue ($620,109) for the two years combined, because of favorable product mix.

Other results worth noting include the following:

- Total attributable costs increase in Year 1 by only 1.21 percent (versus the 1.70 percent cap) because the volume of costly underwater products declines on account of price increases focused on those products.

  - Total attributable costs increase by only 1.58 percent in Year 2, versus the assumed 2.0 percent cap.

- The tradeoff schedule for Standard Flats improves each year, but tradeoffs remain unfavorable vis-a-vis other products.

  - For example, in Base Year (FY 2013) the contribution per dollar of allowable revenue for Standard Flats starts a $1.08. In year 2 it starts at $1.03 (the tradeoff schedule is a declining function).

  - In Year 2 the next highest tradeoffs are Carrier Route and Letters, which start at $0.786.

---

[19] Inserting the Postal Service's CPI increases in Docket No. R2013-10 into the model gives an indicated increase in contribution of $95,104, which is only 53.5 percent of the maximized Year 1 increase in contribution. The cumulative shortfall in obtaining contribution available under the cap helps explain why the Postal Service had a liquidity crisis in FY 2013.

C. Trends.

As noted previously, the model allows for independent exogenous trends, positive or negative, to be inserted for any product. A trend is something more persistent than just a one-time change in volume. At the same time, a trend need not reflect a constant rate of change; *e.g.*, a trend could reflect accelerating or decelerating change. To allow for such possibilities, in the model any trend factor must be input separately each year.

The Postal Service has expressed concern that the volume of Standard Flats has been in comparative autonomous decline:

> **Standard Mail Flats and Standard Mail Letters volumes appear to be on different autonomous (independent of price) tracks**. Long-run profitability requires considering both the short-run (or more immediate) effect of price changes on volume and how much volume will actually be around in the long run to produce a revenue yield. The Valpak model fails to account for the permanent impairment of overall average revenue per piece that can come from devoting limited price cap space to **volume that is in comparative autonomous decline.** Docket No. R2013-11, Response to POIR No. 11, Q8c.

To test the effect of an autonomous decline in Standard Flats volume, a negative secular trend of -5.0 percent was inserted into the model for Years 1 and 2. In Year 1, the price of Standard Flats increases by 12.8 percent, the coverage on Standard Flats is still less than 100 percent, and the autonomous negative trend factor:

- Does not change the optimum price;

- Increases the decline in Standard Flats volume, and accordingly
- Increases contribution and liquidity.

The fact that the optimum price does not change should be no surprise. As witness Taufique's statement says, the Standard Flats product is on its own autonomous track **independent of price.** A moderate trend, such as the one here, that is independent of price should, by definition, have no impact on the optimum price.[20]

In Year 2 the CPI increases by 2.0 percent, thereby expanding the cap space, the price of Standard Flats increases by 14.5 percent, the coverage on Standard Flats at long last exceeds 100 percent (barely), and the independent negative trend factor:

- Does not change the optimum price;
- Increases the decline in Standard Flats volume, but
- Decreases contribution below what it would be if there were no negative trend (because coverage now exceeds 100 percent).

Only when coverage exceeds 100 percent by a comfortable margin does it begin to make sense to be concerned with "how much volume will actually be

---

[20] A trend that "falls off the cliff" and causes volume to go almost straight down might be reason to temper pricing decisions and use cap space for other products. The autonomous decline in Standard Flats volume mentioned by the Postal Service is far removed from that point.

around in the long run to produce" — not revenue — but contribution.[21] So long as coverage is less than 100 percent, the Postal Service is simply engaging in wilful self-denial. Those responsible for pricing should keep in mind what the Postal Service told the court:

> The Postal Service's goal at this time in its history must be to maximize contribution, not reduce it. Postal Service Brief, USCA-DC No. 11-1117.

V. Extending the Model to More Than Two Periods

The years covered by the model can be extended *ad infinitum*, to as many years as desired for viewing changes "in a long run context." Adding more years and using the limited cap space that become available each year to focus price increases on those products with the greatest impact on contribution will continue improving the coverage of Standard Flats. If the Postal Service continues to tightly constrain the price of Standard Flats, however, simply adding more years will not make Standard Flats profitable or justify their continued cross-subsidization by the profitable products in Standard Mail.

If the model is extended to three or more periods, subsequent periods would continue to incorporate current information on known parameters such as elasticity and trends, unless there exists information or other reason to

---

[21] Revenue with negative contribution is no boon, because it reduces liquidity rather than increasing it.

change those parameters. Other variables that are endogenous to the model, such as changes in revenues, costs and volumes, would be generated for each subsequent period. Complexity of the model would increase as extra periods are added, and whether that extra complexity would add any further insight may be worth considering. Of course in each successive year actual volumes and unit costs, as well as estimated elasticities, may change in ways not assumed by the model.

The Postal Service is endeavoring to reduce its cost structure in various ways, all of which are exogenous to the model. The landscape thus keeps changing. Most parcels have been shifted to competitive products. Consequently, parcels now are but a small fraction of their previous volume. This illustrates why the Commission requires annual updates to all data. Knowing that a plethora of changes are bound to occur, one can question the value of having detailed out-year modeled results based on a set of assumptions that may become increasingly obsolete and deviate from the actual underlying situation by an expanding margin.

VI. Long-Run Equilibrium

A multi-period model that maximizes contribution in successive periods, while keeping parameters such as elasticity and secular trends unchanged, will converge to a long-run equilibrium. After long-run equilibrium is reached, very

small changes in the price of any product will provide the Postal Service with the same contribution (*i.e.*, Pareto optimality), and any material change in the relative price of any product will reduce total contribution. This means that after the model achieves long-run equilibrium there will be no further price-induced change in the volume of any product. In the absence of any independent exogenous trends, year-to-year volume would not be expected to change for any product.

If the multi-period model reaches a long-run equilibrium such as that just described, a legitimate question is how the Postal Service can grow contribution by an amount sufficient to improve its financial condition. The short answer is that such "extra" growth in contribution is not endogenous to the model. The model shows how to earn additional contribution when existing prices are sub-optimal. Beyond that, however, extra contribution is precluded by the rate cap and various assumptions such as the lack of secular growth in profitable volume.

With respect to Standard Mail, prices clearly are not now in any kind of long-run equilibrium, and are far removed from being Pareto optimal. The Postal Service presently is in the position that it can — provided it has the desire and will — improve the contribution from Standard Mail significantly by, figuratively speaking, picking the low-hanging fruit. This implies focusing price

increases on those products that are least profitable at the margin until a Pareto optimum equilibrium is reached.

VII. Possible Contribution Gains Outside the Model

The results discussed in Section IV, *supra*, indicate that pricing adjustments can increase net contribution significantly when Postal Service pricing is far removed from optimal. In addition to Postal Service pricing initiatives designed to increase contribution and liquidity, other ways exist for further substantial improvement in the financial position of the Postal Service, but they are exogenous to the model. They all rely on controlling and reducing costs. To increase contribution beyond that attainable within the confines of the model — *i.e.*, within the price cap and existing parameters — the Postal Service has many conceivable possibilities. For example, it could:

- Reduce its non-attributable fixed overhead costs by reorganizing the mail processing network into fewer facilities that are more productive (as it currently is endeavoring to do).

- Eliminate free door delivery to single-family residences that are set back more than 10 feet from the sidewalk and in lieu thereof provide curb or cluster box delivery.

    - Offer door delivery as a paid optional service to all such single-family residences (including those now receiving their mail in curbside mail boxes or community cluster boxes).

- Renegotiate labor contracts in ways that would enable the Postal Service to further lower its labor-related costs beyond the reductions recently achieved.

- Acquire and deploy a new generation of flat sorting equipment that is less costly and more efficient than the existing FSS machines.

- Ensure that (i) best practices are installed at every mail processing plan, and (ii) productivity at every plant is brought up to the level currently achieved at the most productive plants.

- Replace small brick-and-mortar post offices that operate at a deficit with CPUs and VPOs that are less expensive to operate.

All of the above involve operational decisions. What needs to be recognized here is that any reductions in costs currently regarded as "fixed," although endogenous to the Postal Service itself, are outside of (*i.e.*, exogenous to) the model. The model does what it is designed to do. Namely, it shows the Postal Service how to increase contribution up to the maximum obtainable within the confines imposed by (i) the price cap and (ii) existing parameters such as unit costs, demand elasticity and secular volume trends (if any).

In order for Postal Service operations to achieve and exceed financial breakeven, the Postal Service will need to continue reducing its cost structure aggressively, either via some of the ways mentioned above or in other ways.[22] If

---

[22] Such is life in a competitive world, which is where the Postal Service now finds itself thanks to the Internet. *Through the Looking Glass* contains a classic allegory to illustrate the Postal Service's "new normal." After running as fast as she could, getting nowhere, and protesting, the Queen said

and when it does so, those changes will be evidenced in the form of new cost data. Those new data then can be incorporated readily into an update of the parameters in the model. The model itself, however, is only designed to help the Postal Service set pricing priorities. It is not designed to help determine operational priorities, evaluate which cost-saving initiatives it should pursue, or project results of any such initiatives.

Finally, it should be noted that it is quite conceivable for the Postal Service to achieve the maximum contribution indicated by the model and yet have an operating deficit if the maximum contribution is not sufficient to cover fixed costs. The model gives no assurance that the Postal Service will be profitable.

VIII. Conclusion

For several years the Postal Service has been living on the annual cash flow provided by depreciation (until recently about $2.5 billion per year), without replacing that capital base (see Order No. 1926, Table V-2, p 120). The failure to maintain spending on capital investment could be ameliorated by pricing that focuses more on maintaining net contribution and less on gross revenue. Those responsible for pricing decisions do not seem to have a full

---

to Alice "Now, *here*, you see, it takes all the running *you* can do to keep in the same place. If you want to get somewhere else, you must run at least twice as fast."

appreciation for the difference between growing the top line versus growing the bottom line.